Technical Report TR13-6

Agricultural Experiment Station

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2013 Colorado Sunflower Variety Performance Trials

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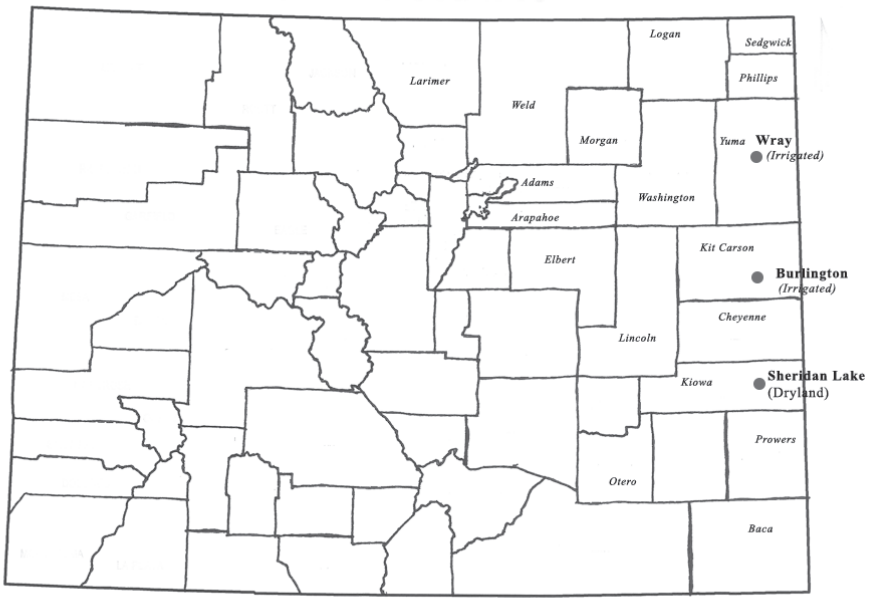
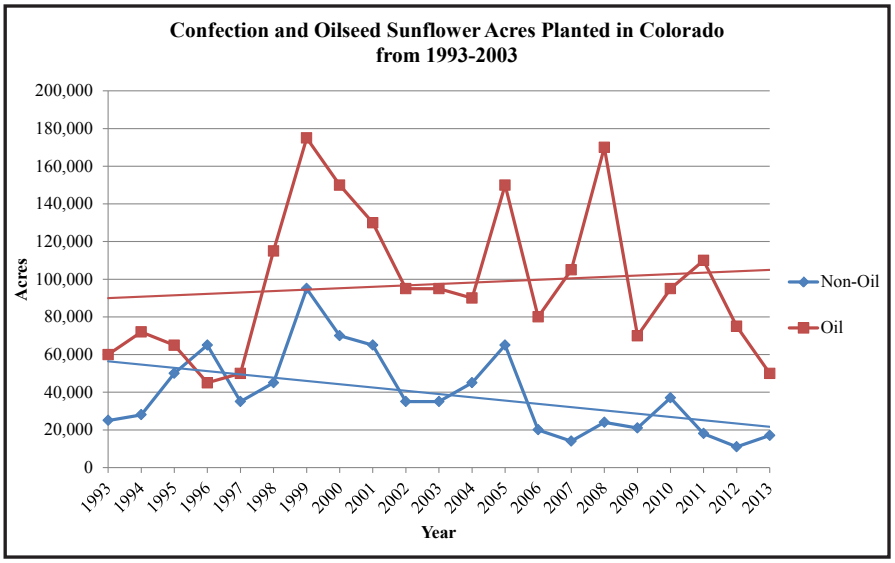
Colorado Sunflower Trial Locations in 2013



2013 Colorado Sunflower Hybrid Performance Trials

Colorado State University conducts hybrid oil and confection sunflower performance trials to provide unbiased and reliable information to Colorado sunflower producers so they can select the best hybrids for their production system. **Variable climatic conditions,** innovations from plant breeding and biotechnology, acquisitions and mergers of seed companies, and rapid development of new hybrid lines means crop performance information is increasingly important to Colorado sunflower producers. The sunflower hybrid performance trial is made possible by funding received from company entry fees, the **Colorado Sunflower Administrative Committee**, and the CSU Agricultural Experiment Station.



Colorado produced approximately **55.1 million pounds** of sunflowers on 70,000 harvested acres in 2012 (most recent year available). The total value of production was over 15.5 million dollars according to the USDA National Ag. Statistics Service. Figure 1 shows the acreage of both oil and confection sunflower has been **highly variable** (especially the oil type) over the past 20 years as the oil type has ranged from 45,000 planted acres in 1996 up to 175,000 acres in 1999, and only 50,000 acres planted in 2013. The planted acres of non-oil type sunflowers has generally decreased since 1999, and has been **planted on fewer acres** than oil sunflower types all but one year (1996). The variability could be due to a variety of factors, including sunflower commodity prices and harvest contract availabilities, soil water at the time of planting, crop insurance requirements, and adoption of crop diversification in increasingly variable cropping rotations. Dryland sunflowers may have fallen out of favor in recent years due to the increasing **popularity of dryland corn,** especially with the new drought tolerant hybrids coming onto the market. Herbicide tolerant sunflower and new oil traits leading to better oil profiles may help increase sunflower acreage in the coming years.

Colorado State University personnel evaluated commercial and experimental oil and confection sunflower hybrids in eastern Colorado at **two irrigated and two dryland locations** in 2013. Irrigated locations included Burlington and Wray. The two dryland trials were located at Fleming and Sheridan Lake. Unfortunately, we lost one trial this year (Fleming) due to poor emergence (less than 10%) and soil crusting due to a hard rain after planting and reseeding. The dryland trial in Kiowa County suffered from extreme drought at the end of the growing season. **Fifty-two hybrids** with diverse origins and maturities were tested across different irrigated and dryland trial locations. Results tables for the trials are presented in the following pages. Plot sizes were approximately 150 ft^2. All irrigated trials were planted at 20,000 seeds per acre and both dryland trials were planted at 15,000 seeds per acre. Seed yields for all trial varieties are reported in the tables. Yields and oil content (for oil trials) are adjusted to 10% seed moisture content.

2013 Limited-Irrigated Oil Sunflower Hybrid Performance Trial at Burlington

Brand	Hybrid	Oil Type[a]	Herbicide Technology Trait[b]	Yield[c]	2-Year Avg. Yield	Moisture	Test Weight	Plant Height	Population	Lodging	Oil Content
				lb/ac		percent	lb/bu	in	plants/ac	percent	percent
Croplan	13-652 CL	NS	Clearfield	2526	-	7.2	26.2	61	19,204	4.3	39.4
Nuseed/Seeds 2000	NLK12M008	NS	Clearfield	2447	-	7.9	30.3	65	21,954	9.0	40.9
Triumph	662	NS	N/A	2381	2454	7.2	28.6	53	19,083	12.9	39.3
Mycogen	8N510	NS	N/A	2340	2704	7.1	28.5	48	19,354	13.3	38.4
Triumph	s673	NS	N/A	2304	2809	7.1	28.1	49	23,284	10.1	41.6
Syngenta	3845 HO	HO	N/A	2285	2536	6.9	29.7	52	17,273	13.0	41.7
Triumph	s668	NS	N/A	2233	2465	7.3	29.0	42	19,772	17.1	41.6
Triumph	849CLD	HO	Clearfield	2228	2607	7.3	31.0	50	20,297	6.8	41.8
Croplan	13-59 CL	NS	Clearfield	2222	-	8.1	29.9	59	19,298	13.3	40.0
Triumph	TRXs12435CP	HO	Clearfield Plus	2200	-	8.8	26.6	47	19,764	4.1	41.3
Mycogen	8N668S	NS	N/A	2192	-	7.5	29.3	45	22,612	10.3	41.3
Triumph	651CLD	NS	Clearfield	2182	2522	6.8	29.4	58	21,483	9.0	39.7
Nuseed/Seeds 2000	HORNET	HO	Clearfield	2055	-	7.3	28.5	61	22,894	8.7	40.3
Triumph	s870CL	HO	Clearfield	2031	-	7.4	29.2	45	22,735	5.3	41.6
Croplan	559 CL	NS	Clearfield	2026	-	7.3	29.3	57	18,737	30.6	38.4
Mycogen	8H449CLDM	HO	Clearfield	2017	2390	7.4	30.8	48	18,822	6.0	39.5
Nuseed/Seeds 2000	Torino	NS	Clearfield	1975	2611	7.6	29.9	60	20,259	14.1	39.7
Mycogen	8N421CLDM	NS	Clearfield	1932	2455	7.1	28.8	62	18,187	13.5	39.0
Syngenta	3733 NS/DM	NS	N/A	1897	2312	6.9	29.8	53	17,148	21.0	40.0
Croplan	460 E	NS	ExpressSun	1854	-	7.2	27.3	56	16,460	21.8	41.4
Croplan	548 CL	NS	Clearfield	1838	-	7.1	30.3	57	16,701	7.3	37.0
Nuseed/Seeds 2000	Falcon	NS	ExpressSun	1806	2385	6.8	29.3	49	20,729	7.2	39.2
Croplan	13-08 E	HO	ExpressSun	1787	-	7.9	25.3	55	17,696	10.0	29.6
Nuseed/Seeds 2000	Camaro II	NS	Clearfield	1686	-	7.3	31.1	60	20,558	10.9	39.9
Croplan	13-86 E	NS	ExpressSun	1582	-	7.1	29.8	58	18,909	8.4	40.7
Croplan	13-52 E	NS	ExpressSun	1582	-	7.1	29.4	57	16,110	18.8	40.4
Syngenta	3158 NS/CL/DM	NS	Clearfield	1519	1916	7.5	29.9	54	19,527	18.6	38.6
Nuseed/Seeds 2000	Cobalt II	HO	Clearfield	1460	-	7.5	29.5	54	21,819	6.7	39.0
Croplan	432 E	NS	ExpressSun	1415	-	7.5	29.5	56	21,916	10.2	33.8
Average				**2000**	**2474**	**7.4**	**29.1**	**54**	**19,744**	**11.8**	**39.5**
[d]LSD (P<0.30)				262							

[a]Oil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

[b]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; Clearfield Plus=Tolerant to Beyond herbicide; ExpressSun=Tolerant to Express herbicide; N/A=No herbicide traits.

[c]Yields were corrected to 10% moisture.

[d]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

Plot size: 5' x 31'

Site Information

Collaborator:	Gerhard Heintges
Planting Date:	6/3/2013
Harvest Date:	10/16/2013
Fertilizer:	Nitrogen at 110 lb/ac and phosphorus at 25 lb/ac
Herbicide:	Spartan applied at 3.2 oz/ac and Select applied post-emerge at 6 oz/ac
Insecticide:	Warrior II applied at 1.25 oz/ac on 8/5/13 and 8/23/13
Irrigation Notes:	The trial received 5 inches of irrigation prior to planting and then 2 additional inches pre-bloom

2013 Limited-Irrigated Confection Sunflower Hybrid Performance Trial at Burlington

Brand	Hybrid	Herbicide Technology Trait[a]	Yield[b]	2-Year Avg. Yield	Moisture	Test Weight	Plant Height	Population	Lodging	Seed Size: Over 24/64	Over 22/64	Over 20/64	Over 16/64	Through 16/64
			lb/ac	lb/ac	percent	lb/bu	in	plants/ac	percent	percent				
Red River Commodities	RRC 2215	N/A	2191	2512	10.0	19.4	66	14,434	7.9	28.6	43.6	21.2	5.2	1.4
Red River Commodities	RRC 2215 CL	Clearfield	2191	2734	10.7	18.2	69	15,154	8.6	29.2	35.2	25.0	10.0	0.6
Sunopta/Dahlgren	9506CL	Clearfield	2166	-	9.7	18.0	82	15,335	19.0	47.2	32.6	11.2	8.6	0.4
Triumph	751CP	Clearfield Plus	2122	-	10.3	17.7	67	16,419	6.6	35.8	30.8	21.8	10.2	1.4
Triumph	770CL	Clearfield	2118	-	10.1	19.0	74	14,973	9.5	47.4	27.6	11.6	12.4	1.0
Nuseed Global	NHW12717	N/A	2107	-	9.6	20.6	77	14,988	12.5	3.6	4.6	7.4	77.0	7.4
Sunopta/Dahlgren	9530CL	Clearfield	2084	-	10.0	19.1	61	15,009	7.3	31.8	37.6	17.6	11.6	1.4
Nuseed Global	5009	N/A	2074	2554	9.7	19.8	58	14,953	10.2	2.0	13.4	36.4	46.8	1.4
Red River Commodities	RRC 2217	N/A	2047	2456	9.0	18.3	67	14,411	15.5	18.6	39.4	27.6	12.4	2.0
Mycogen	8C451CP	Clearfield Plus	2029	2562	9.4	17.5	60	14,110	13.1	24.6	34.0	22.6	17.0	1.8
Red River Commodities	RRC 8015	N/A	2028	2618	9.2	16.9	60	13,115	14.5	14.8	32.4	35.4	16.4	1.0
Nuseed/Seeds 2000	Jaguar	Clearfield	1988	2352	9.7	18.2	54	16,740	6.7	25.4	41.8	23.2	8.0	1.6
Nuseed Global	X98578	N/A	1939	-	10.1	16.4	67	15,738	8.0	22.4	30.0	28.6	17.8	1.2
Sunopta/Dahlgren	9579	N/A	1927	-	9.7	16.6	66	14,392	14.6	14.4	29.8	41.0	13.8	1.0
Nuseed/Seeds 2000	X4334	Clearfield	1875	2563	11.9	17.0	63	15,447	9.8	49.0	28.2	10.6	10.6	1.6
Sunopta/Dahlgren	9521	N/A	1811	-	9.5	19.1	72	14,088	3.8	38.6	33.6	18.2	8.4	1.2
Nuseed/Seeds 2000	Jaguar XL	Clearfield	1800	-	17.2	16.8	73	16,226	9.8	13.4	22.2	32.0	30.0	2.4
Sunopta/Dahlgren	9592CL+	Clearfield Plus	1795	-	10.2	17.6	66	16,469	11.9	28.8	32.8	23.4	13.8	1.2
Triumph	TRX3412C	N/A	1794	-	10.4	18.0	78	14,973	9.4	19.2	34.2	28.0	16.8	1.8
Nuseed Global	NHW12703	N/A	1764	-	11.9	18.6	85	15,039	11.8	4.0	10.0	29.0	56.0	1.0
Nuseed Global	NHW11914	N/A	1715	-	10.8	18.2	67	15,419	11.2	7.6	13.4	32.0	44.4	2.6
Nuseed/Seeds 2000	Jaguar II	Clearfield	1686	2403	10.1	18.4	56	14,680	11.1	24.8	32.2	17.6	22.6	2.8
Nuseed Global	NHW10403	N/A	1666	-	9.5	17.5	66	15,413	12.6	19.2	26.4	34.2	13.8	6.4
Nuseed Global	NHW11915	N/A	1637	-	15.5	18.4	77	13,458	10.4	4.8	9.0	18.6	62.4	5.2
Triumph	755C	N/A	1617	-	9.8	17.9	83	15,352	10.3	25.6	29.8	30.6	12.6	1.4
Nuseed/Seeds 2000	NSK12M048	Clearfield	1495	-	12.4	15.9	71	13,157	11.7	69.4	15.0	9.4	5.0	1.2
Nuseed Global	X3939	N/A	1337	-	9.6	18.5	63	15,786	11.6	6.8	11.2	21.2	57.2	3.6
Average			**1889**	**2528**	**10.6**	**18.1**	**68**	**15,010**	**10.7**	**24.3**	**27.1**	**23.5**	**23.0**	**2.1**
[c]LSD (P<0.30)			187											

[a]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; Clearfield Plus=Tolerant to Beyond herbicide; N/A=No herbicide traits.

[b]Yields were corrected to 10% moisture.

[c]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

Site Information

Collaborator:	Gerhard Heintges
Planting Date:	6/3/2013
Harvest Date:	10/17/2013
Fertilizer:	Nitrogen at 110 lb/ac and phosphorus at 25 lb/ac
Herbicide:	Spartan applied at 3.2 oz/ac and Select applied post-emerge at 6 oz/ac
Insecticide:	Warrior II applied at 1.25 oz/ac on 8/5/13 and 8/23/13
Irrigation Notes:	The trial received 5 inches of irrigation prior to planting and then 2 additional inches pre-bloom

2013 Dryland Oil Sunflower Hybrid Performance Trial at Sheridan Lake (Southeast)

Brand	Hybrid	Oil Type[a]	Herbicide Technology Trait[b]	Yield[c]	Moisture	Test Weight	Plant Height	Population	Lodging	Oil Content
				lb/ac	percent	lb/bu	in	plants/ac	percent	percent
Syngenta	3733 NS/DM	NS	N/A	660	6.8	21.5	36	12,601	25.7	30.5
Mycogen	8N510	NS	N/A	596	6.6	21.1	35	13,124	15.0	30.1
Croplan	432 E	NS	ExpressSun	584	6.7	21.0	35	13,721	8.9	31.1
Croplan	548 CL	NS	Clearfield	555	6.7	20.8	46	12,611	24.0	31.3
Croplan	13-59 CL	NS	Clearfield	522	6.6	22.1	38	13,150	31.3	33.4
Triumph	651CLD	NS	Clearfield	515	6.5	22.4	41	12,829	12.0	32.7
Mycogen	8N421CLDM	NS	Clearfield	505	6.5	22.1	41	12,840	12.5	33.0
Syngenta	3845 HO	HO	N/A	495	6.5	21.6	35	11,984	17.1	30.5
Triumph	662	NS	N/A	490	6.7	21.5	36	12,528	20.9	30.9
Croplan	13-52 E	NS	ExpressSun	469	6.7	21.2	33	12,304	26.2	31.6
Mycogen	8H449CLDM	HO	Clearfield	452	6.6	20.8	35	12,025	15.5	28.9
Nuseed/Seeds 2000	Torino	NS	Clearfield	451	6.7	22.1	39	13,192	24.0	30.0
Nuseed/Seeds 2000	NLK12M008	NS	Clearfield	448	6.7	21.7	40	12,778	38.0	30.6
Croplan	13-652 CL	NS	Clearfield	419	6.6	20.2	45	12,684	30.2	30.0
Triumph	849CLD	HO	Clearfield	408	6.6	22.6	41	12,772	12.8	30.5
Syngenta	3158 NS/CL/DM	NS	Clearfield	405	6.7	21.3	38	13,129	38.9	30.1
Nuseed/Seeds 2000	HORNET	HO	Clearfield	398	6.7	21.7	46	13,192	38.0	32.0
Triumph	s870CL	HO	Clearfield	395	6.6	21.3	34	12,296	24.4	32.3
Triumph	s668	NS	N/A	378	6.6	21.2	33	11,960	19.1	31.6
Croplan	13-08 E	HO	ExpressSun	366	6.8	21.1	52	11,043	16.6	29.6
Mycogen	8N668S	NS	N/A	363	6.7	21.7	34	12,902	22.5	31.6
Triumph	s673	NS	N/A	363	6.6	21.9	31	11,663	15.1	33.3
Croplan	559 CL	NS	Clearfield	351	6.7	20.6	45	11,784	21.9	29.8
Croplan	13-86 E	NS	ExpressSun	333	6.8	21.1	34	12,000	32.9	29.3
Croplan	460 E	NS	ExpressSun	288	6.7	20.9	41	11,794	30.1	31.1
Average				**448**	**6.6**	**21.4**	**38**	**12,516**	**22.9**	**31.0**
[d]LSD (P<0.30)				94						

[a]Oil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

[b]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; ExpressSun=Tolerant to Express herbicide; N/A=No herbicide traits.

[c]Yields were corrected to 10% moisture.

[d]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

Plot size: 5' x 30'

Site Information

Collaborator: Burl Scherler
Planting Date: 6/14/2013
Harvest Date: 10/21/2013
Comments: Extremely hot and dry conditions were experienced during the flowering and grain fill stages, which resulted in lower yields.

2013 Dryland Confection Sunflower Hybrid Performance Trial at Sheridan Lake (Southeast)

Brand	Hybrid	Herbicide Technology Trait[a]	Yield[b]	Moisture	Test Weight	Plant Height	Population	Lodging	Seed Size: Over 24/64	Over 22/64	Over 20/64	Over 16/64	Through 16/64
			lb/ac	percent	lb/bu	in	plants/ac	percent	percent				
Nuseed/Seeds 2000	Jaguar II	Clearfield	763	7.8	14.7	46	9,515	4.7	27.2	23.0	19.4	26.8	3.6
Nuseed Global	5009	N/A	723	7.6	15.1	41	9,784	16.3	11.2	33.2	30.0	22.8	2.8
Triumph	755C	N/A	721	7.6	15.1	54	10,445	20.0	6.2	22.8	27.2	40.4	3.4
Red River Commodities	RRC 2215	N/A	685	7.6	15.7	53	9,285	16.7	18.6	29.2	25.4	24.8	2.0
Nuseed Global	NHW11914	N/A	661	7.7	15.5	52	8,831	20.1	12.0	25.0	33.8	26.4	2.8
Nuseed Global	NHW11915	N/A	647	7.7	16.5	52	8,356	14.6	7.4	10.0	15.2	56.8	10.6
Mycogen	8C451CP	Clearfield Plus	620	7.9	15.5	47	8,273	11.3	16.4	25.2	29.0	26.2	3.2
Nuseed Global	X98578	N/A	617	7.6	15.0	49	10,142	21.1	18.2	25.4	27.4	25.6	3.4
Nuseed Global	NHW10403	N/A	583	7.5	14.9	50	8,485	12.2	27.6	28.8	21.2	20.0	2.4
Nuseed Global	NHW12717	N/A	581	7.6	15.6	46	9,498	15.5	12.2	18.0	17.2	45.6	7.0
Red River Commodities	RRC 2215 CL	Clearfield	566	7.7	15.0	52	9,634	9.9	7.6	25.8	28.4	33.6	4.6
Nuseed Global	NHW12703	N/A	566	7.6	15.6	52	10,284	20.9	7.2	17.8	27.2	42.2	5.6
Nuseed/Seeds 2000	X4334	Clearfield	565	7.8	16.0	45	8,575	15.9	15.2	20.4	23.4	36.0	5.0
Red River Commodities	RRC 8015	N/A	537	7.6	15.2	41	9,523	14.4	13.8	26.4	29.4	28.2	2.2
Triumph	751CP	Clearfield Plus	522	7.7	15.0	48	11,161	11.2	19.2	30.4	26.6	22.6	1.2
Nuseed Global	X3939	N/A	512	7.7	15.4	53	10,275	12.5	4.2	15.8	25.0	51.2	3.8
Triumph	TRX3412C	N/A	508	7.6	15.1	54	8,942	19.3	10.6	26.4	26.2	33.6	3.2
Red River Commodities	RRC 2217	NA	415	7.7	14.4	50	8,287	10.0	19.8	27.4	26.2	25.2	1.4
Triumph	770CL	Clearfield	380	7.6	15.2	53	8,928	7.8	11.6	26.2	26.8	31.3	4.1
Average			**588**	**7.6**	**15.3**	**49**	**9,380**	**14.4**	**14.0**	**24.1**	**25.5**	**32.6**	**3.8**
[c]LSD (P<0.30)			94										

[a]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; Clearfield Plus=Tolerant to Beyond herbicide; N/A=No herbicide traits.

[b]Yields were corrected to 10% moisture.

[c]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

Plot size: 5' x 30'

Site Information

Collaborator: Burl Scherler
Planting Date: 6/14/2013
Harvest Date: 10/22/2013
Comments: Extremely hot and dry conditions were experienced during the flowering and grain fill stages, which resulted in lower yields.

2013 Irrigated Oil Sunflower Hybrid Performance Trial at Wray

Brand	Hybrid	Oil Type[a]	Herbicide Technology Trait[b]	Yield[c]	Moisture	Test Weight	Plant Height	Population	Lodging	Oil Content
				lb/ac	percent	lb/bu	in	plants/ac	percent	percent
Syngenta	3845 HO	HO	N/A	2969	5.8	30.2	59	19,063	7.9	40.9
Mycogen	8N510	NS	N/A	2957	6.2	29.4	59	20,187	1.8	37.6
Croplan	13-59 CL	NS	Clearfield	2957	7.9	32.3	65	20,750	8.1	38.7
Triumph	662	NS	N/A	2924	6.2	29.0	61	20,609	5.8	37.5
Mycogen	8H449CLDM	HO	Clearfield	2921	6.5	33.8	62	19,355	4.5	40.1
Triumph	849CLD	HO	Clearfield	2902	6.5	31.9	62	20,667	4.5	40.1
Croplan	432 E	NS	ExpressSun	2884	6.4	30.8	60	18,829	4.5	36.4
Nuseed/Seeds 2000	NLK12M008	NS	Clearfield	2874	7.0	31.9	59	21,921	21.9	40.2
Triumph	651CLD	NS	Clearfield	2835	6.4	31.3	67	21,780	5.4	38.6
Croplan	13-86 E	NS	ExpressSun	2831	6.3	30.5	57	21,921	5.1	41.3
Mycogen	8N421CLDM	NS	Clearfield	2740	6.5	31.0	69	20,448	5.8	38.2
Croplan	13-52 E	NS	ExpressSun	2642	5.9	30.5	61	21,719	7.3	40.4
Nuseed/Seeds 2000	Camaro II	NS	Clearfield	2599	6.6	32.7	69	21,428	3.6	38.3
Syngenta	3158 NS/CL/DM	NS	Clearfield	2582	6.6	29.8	60	19,015	8.1	38.2
Triumph	s673	NS	N/A	2539	6.3	29.7	54	18,853	18.8	39.5
Nuseed/Seeds 2000	Falcon	NS	ExpressSun	2464	6.6	31.6	64	19,438	5.9	37.6
Nuseed/Seeds 2000	HORNET	HO	Clearfield	2432	6.6	30.3	66	19,953	10.1	39.5
Croplan	548 CL	NS	Clearfield	2392	6.2	30.5	61	18,750	6.4	37.4
Syngenta	3733 NS/DM	NS	N/A	2348	6.4	30.3	64	21,124	10.6	37.7
Mycogen	8N668S	NS	N/A	2288	7.1	31.5	59	20,058	10.5	38.6
Croplan	559 CL	NS	Clearfield	2286	6.2	31.4	70	20,000	11.3	38.6
Croplan	13-08 E	HO	ExpressSun	2175	7.4	28.4	68	14,322	2.1	37.0
Nuseed/Seeds 2000	Torino	NS	Clearfield	2156	6.9	31.4	67	19,906	9.0	39.0
Triumph	s668	NS	N/A	2153	6.8	31.5	48	18,565	10.6	39.7
Triumph	s870CL	HO	Clearfield	2114	6.1	31.2	54	18,743	6.5	39.7
Croplan	460 E	NS	ExpressSun	2093	6.3	28.1	70	21,602	13.6	40.5
Croplan	13-652 CL	NS	Clearfield	1993	6.3	28.5	70	19,860	18.4	37.5
Nuseed/Seeds 2000	Cobalt II	HO	Clearfield	1844	6.7	31.7	62	8,806	6.4	37.8
Triumph	TRXs12435CP	HO	Clearfield Plus	1798	7.9	28.4	53	16,896	7.3	38.4
Average				**2507**	**6.6**	**30.7**	**62**	**19,468**	**8.3**	**38.8**
[d]LSD (P<0.30)				282						

[a]Oil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

[b]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; Clearfield Plus=Tolerant to Beyond herbicide; ExpressSun=Tolerant to Express herbicide; N/A=No herbicide traits.

[c]Yields were corrected to 10% moisture.

[d]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

Plot size: 5' x 31'

Site Information

Collaborator:	Jerry McPherson
Planting Date:	6/3/2013
Harvest Date:	10/24/2013
Fertilizer:	Nitrogen at 5 lb/ac and phosphorus 55 lb/ac as starter, and nitrogen at 100 lb/ac later in the season
Herbicide:	Dual, Spartan, and Eptam

2013 Irrigated Confection Sunflower Hybrid Performance Trial at Wray

Brand	Hybrid	Herbicide Technology Trait[a]	Yield[b]	Moisture	Test Weight	Plant Height	Population	Lodging	Seed Size: Over 24/64	Over 22/64	Over 20/64	Over 16/64	Through 16/64
			lb/ac	percent	lb/bu	in	plants/ac	percent	percent				
Sunopta/Dahlgren	9521	N/A	3089	8.6	20.9	74	16,763	4.0	53.4	27.8	11.4	5.8	1.6
Red River Commodities	RRC 8015	N/A	2787	9.5	17.7	66	13,958	9.3	28.2	37.6	23.4	9.4	1.4
Sunopta/Dahlgren	9530CL	Clearfield	2690	9.7	20.3	73	14,379	7.2	34.6	38.0	17.2	8.4	1.8
Red River Commodities	RRC 2215 CL	Clearfield	2590	9.0	21.1	73	16,408	7.1	24.8	37.0	26.8	9.4	2.0
Nuseed/Seeds 2000	Jaguar	Clearfield	2511	8.9	18.2	68	13,090	3.8	61.8	23.8	6.8	5.4	2.2
Red River Commodities	RRC 2215	N/A	2511	9.0	21.2	72	12,693	5.1	22.6	45.2	22.0	8.6	1.6
Sunopta/Dahlgren	9506CL	Clearfield	2505	10.2	20.6	77	14,848	10.9	44.8	38.6	11.4	4.0	1.2
Red River Commodities	RRC 2217	N/A	2492	8.6	19.6	69	14,448	7.2	37.6	34.2	18.2	8.8	1.2
Nuseed/Seeds 2000	X4334	Clearfield	2379	10.7	18.3	74	11,452	9.2	59.4	22.8	12.0	4.4	1.4
Mycogen	8C451CP	Clearfield Plus	2373	9.7	19.0	68	14,898	8.6	31.2	34.8	22.4	9.6	2.0
Nuseed/Seeds 2000	Jaguar XL	Clearfield	2344	12.8	18.9	72	9,798	4.9	19.8	33.2	28.6	15.6	2.8
Sunopta/Dahlgren	9579	N/A	2316	9.2	17.3	66	18,154	14.2	37.0	32.6	22.0	7.0	1.4
Sunopta/Dahlgren	9592CL+	Clearfield Plus	2314	9.4	19.0	70	14,100	9.4	49.0	30.0	12.6	7.0	1.4
Nuseed/Seeds 2000	NSK12M048	Clearfield	1891	9.8	16.6	70	9,819	13.3	76.0	13.6	5.8	3.4	1.2
Nuseed/Seeds 2000	Jaguar II	Clearfield	1765	9.3	18.3	66	12,210	8.4	48.8	27.2	14.0	8.2	1.8
Average			**2437**	**9.6**	**19.1**	**71**	**13,801**	**8.2**	**41.9**	**31.8**	**17.0**	**7.7**	**1.7**
[c]LSD (P<0.30)			271										

[a]Herbicide technology trait designations: Clearfield=Tolerant to Beyond herbicide; Clearfield Plus=Tolerant to Beyond herbicide; N/A=No herbicide traits.

[b]Yields were corrected to 10% moisture.

[c]If the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is statistically significant.

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Herbicide:	Dual, Spartan, and Eptam

Colorado State University

Crops Testing

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Extension

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